

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Application No.: 09/830,875

REMARKS

Upon entry of this Amendment, claims 12-27 are all the claims pending in the application.

Claims 1-11 are canceled.

New claims 12-27 are added. New claims 12 to 17 are related to the cover glass having a hard coating film transferred from a transfer foil only on the outer surface of the cover glass substrate. Support in the specification is found at the paragraph bridging pages 31-32 through page 36, and in the original claims. New claims 18 to 27 are related to the cover glass having hard coating film on both surfaces of the cover glass substrate by coating and curing from a coating composition. Support is found in the specification at the paragraph bridging pages 35-36 through page 36 and in the original claims. No new matter is added.

Claims 2, 5 and 7 are rejected under 35 U.S.C. §112, second paragraph, as being indefinite.

It is stated that the phase “having an anti-reflection coating interposed between them” in claims 2 and 5 is unclear.

In claim 7, more than one period is present.

In response, Applicants have canceled the rejected claims. It is respectfully asserted that the replacement claims do not have these defects, and Applicants request that the rejection be withdrawn.

Claims 1-3, 7, 8 and 10 are rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent 4,765,729 (“Taniguchi”).

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Taniguchi is asserted to disclose an optical article that uses a glass substrate as part of an optical article. It is stated that an antireflection film (coating) is formed on the outside of the substrate, and a film can be formed over the antireflection coating, placing it between the substrate and the film. It is further stated that a hard coat film is placed on the substrate before placing the antireflection coating on the substrate. Taniguchi is asserted to disclose that the film formed by coating and curing contains silica (silicon oxide) particles with diameters between 1 to 200 nm and an organic silicon compound with hydrolyzable groups. It is asserted that Taniguchi discloses that the antireflection film can have a decorative part by dyeing the film.

In response, Applicants respectfully assert that the substitute claims are not anticipated by Tanigichi.

Tanigichi does not disclose anti-reflection coatings formed on both the inner and outer surfaces of the glass substrate. Therefore, the new claims reciting that the anti-reflection coatings are formed on both the inner and outer surfaces of the glass substrate are not disclosed by Taniguchi.

Moreover, the recitations of claims 4-6 and 9, which are not rejected over Tanigichi, have been incorporated into the new claims. Therefore, the new claims are not anticipated by Tanigichi, and it is respectfully requested that the rejection be withdrawn.

Claim 1 is rejected under 35 U. S.C. §102(b) as being anticipated by U.S. Patent 4,802,737 (“Denton”).

Claim 1 is also rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent 4,634,270 (“Yokoo”).

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Claims 6, 9 and 11 are rejected under 35 U.S.C. §103(a) as being unpatentable over Taniguchi in view of U.S. Patent 6,329,041 ("Tsuchiya").

In response to these three rejections, Applicants respectfully traverse.

Conventional cover glass to be fixed to the window of a housing of a portable apparatus such as a cellular phone, does not make the liquid crystal display completely visible because of its poor optical performance.

There is a gap (air layer) between the cover glass and the display unit of a portable apparatus. A liquid crystal display of the reflection type which utilizes external light is typically mounted in a portable apparatus such as a cellular phone. External light incident on the cover glass passes through the cover glass and reaches the display unit, and after reflection by the display unit, light passes through the cover glass again and reaches the eye.

The anti-reflection coating of the inside of the cover glass was invented by discovery of the gap between the cover glass and the display unit.

The anti-reflection coating formed on the inner surface permits the light reflected by the liquid crystal display to pass through almost completely, thereby apparently increasing the reflectivity of the liquid crystal display. This makes the liquid crystal display brighter and more easily visible. The cover glass has a light transmittance of about 92% if it has no anti-reflection coating; however, it increases in light transmittance to 98% or above, if it is provided with the anti-reflection coating on both surfaces of the cover glass.

In regard to new claim 12, a coating film being transferred from a transfer foil has a stripping layer to strip from a base film, a bonding layer to bond to a work and no base film, for

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example, as described in USP 5,418,075. Therefore, the structure of a hard coating film being transferred from a transfer foil is distinguishable from the structure of a hard coating film being formed by coating or a hard coat film as described in Tsuchiya.

A hard coating film being transferred from a transfer foil is formed on the outer surface of the cover glass substrate by hot stamping. On the contrary, a hard coating film being formed by dip coating always forms on the both surfaces of the cover glass substrate. Hot stamping permits efficient production of hard coating film and also permits transfer to a curved surface. Moreover, hot stamping is effective in producing cover glass at low cost.

In regard to new claim 13, the preformed film having an anti-reflection coating is advantageous in productivity and production cost over the anti-reflection coating formed directly on the cover glass, because it can be fabricated more efficiently.

The preformed film having an anti-reflection coating is comparatively rigid and hence is poor in flexibility; therefore, it is hard to attach to a curved surface and its use is preferred for a flat surface or a cylindrical surface in this stage. The inner surface of the cover glass is flat or slightly concave because it is placed near the flat view plane of a display.

The preformed film having an anti-reflection coating stuck to the inner surface of the cover glass substrate poses no problems with its external appearance. This obviates or simplifies the edge finishing of the preformed film having an anti-reflection coating. In addition, the preformed film having an anti-reflection coating can be stuck to the cover glass substrate efficiently by an automatic machine. Thus it is possible to reduce production cost by sticking the

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preformed film having an anti-reflection coating rather than forming an anti-reflection coating directly on the inner surface of the cover glass.

A combination of the hard coating film transferred from a transfer foil on the outer surface of the cover glass substrate and the preformed film having an anti-reflection coating on the inner surface of the cover glass substrate is advantageous in productivity and production cost.

None of the asserted references disclose or suggest such a combination. Therefore, Applicants submit that claim 13 is patentable and the rejections should be withdrawn.

In regard to claim 14, Taniguchi does not disclose or suggest the antireflection film having a decorative part by dyeing the film.

In regard to claim 18, the adhesion of a primer layer made of aqueous polyurethane resin interposed between the cover glass substrate and the hard coating film is superior to other primers in that there is a remarkable improvement in the shock resistance of the cover glass.

The cited references do not disclose or suggest a primer layer made of aqueous polyurethane resin interposed between the cover glass substrate and the hard coating film.

In regard to claim 21, Taniguchi does not disclose or suggest the gap between the cover glass and the display unit of a portable apparatus. Therefore, Taniguchi does not disclose or suggest the claimed anti-reflection coating of the inside of the cover glass.

In regard to claim 22, the disilane compound improves water-resistance of the hard coating film. The cited references do not disclose or suggest that the coating composition includes the claimed disilane compound.

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In regard to claim 24, the anti-reflection coating of the inside of the cover glass was invented by such discovery as mentioned previously, and improves the visibility of the display unit.

The preformed film having an anti-reflection coating stuck to the inner surface of the cover glass substrate poses no problems with its external appearance. This obviates or simplifies the edge finishing of the preformed film having an anti-reflection coating. Such a combination is neither disclosed nor suggested by the cited references. Therefore, Applicants' new claims are not anticipated or obvious in view of the cited art. For at least these reasons, it is respectfully requested that the rejections be reconsidered and withdrawn.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

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The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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APPENDIX
VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

Claims 1-11 are canceled.

Claims 12-27 are added as new claims.